
INTEL 4Q 2024 EARNINGS: DATA CENTER & AI GROUP

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CONTEXT

The latest earnings call from Intel Corporation offers a comprehensive overview of the company's current trajectory and outlook, underscoring significant strides in its ambitious IDM 2.0 transformation.



This Research Note will focus primarily on Intel's Data Center & AI Group (DCAI) and those elements that impact enterprise infrastructure.

OVERALL PERFORMANCE

Here's a summary of Intel's performance presented in the earnings call:

- Strong Financial Results:** Intel reported robust financial results in the quarter, surpassing guidance across revenue, gross margin, and EPS.
- Investment and Expense Management:** The company prioritized investments and aggressively managed near-term expenses, making significant progress in reducing structural cost gaps.

3. **Healthy Financial Position Exiting 2023:** Intel concluded the year as a leaner and healthier company, though acknowledging the need for further work to achieve long-term financial goals and realize the potential of IDM 2.0.
4. **Fourth Quarter Financials:**
 - Revenue: \$15.4 billion, up 9% sequentially, 10% year-over-year, and \$300 million above the guidance midpoint.
 - Gross Margin: 48.8%, exceeding guidance by 230 basis points.
 - EPS: \$0.54, \$0.10 above guidance.
 - Operating Cash Flow: \$4.6 billion.
 - Net Inventory: Reduced by over \$300 million.
 - Net CapEx: \$5.9 billion, leading to a negative adjusted free cash flow of \$1.3 billion.
 - Dividends: \$0.5 billion paid in the quarter.
5. **Business Unit Performance:**
 - Client Computing Group (CCG): Revenue of \$8.8 billion, up 12% sequentially and 33% year-over-year.
 - Data Center Group (DCAI): Revenue of \$4 billion, up 4% sequentially.
 - Network and Edge Group (NEX): Revenue of \$1.5 billion, up 1% sequentially.
 - Intel Foundry Services: Revenue of \$291 million, up 63% year-over-year.
 - Mobileye: Record revenue of \$637 million, up 20% sequentially and 13% year-over-year.
6. **IDM 2.0 Strategy:** Intel made significant progress despite macroeconomic challenges, including a commitment to reduce spending by \$3 billion in 2023.
7. **Cash and Cost Controls:** Strong focus on Days Sales Outstanding (DSO) and Days Payable Outstanding (DPO) with significant inventory reductions.
8. **Capital Framework:** Intel continued executing within the smart capital framework, including recognizing \$845 million in manufacturing investment credits.
9. **Q1 2024 Guidance:** Projected revenue between \$12.2 billion and \$13.2 billion, with an expected gross margin of approximately 44.5% and EPS of \$0.13.

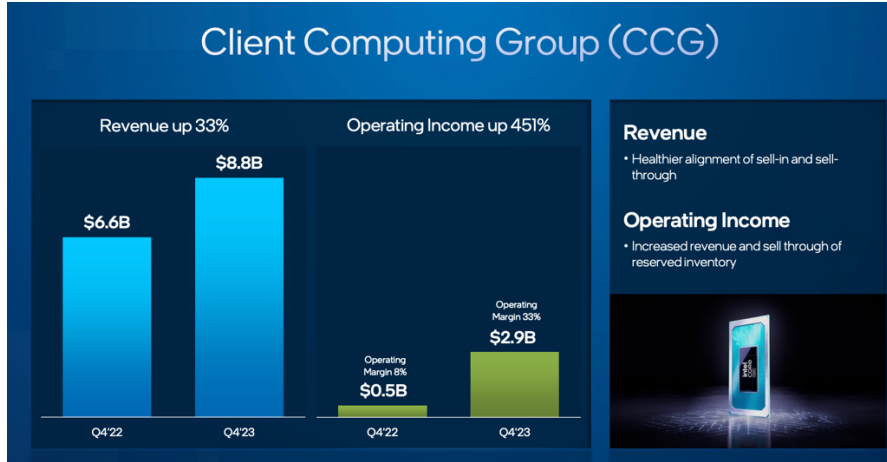
10. **Market Outlook:** Positive signals for PC demand growth and expectations for data center revenue improvement throughout 2024.
11. **Investment in Future Growth:** Acknowledgment of challenges in rapidly delivering 5 nodes in 4 years and expanding capacity for external foundry commitments.
12. **New Reporting Structure:** Introduction of an internal foundry reporting structure for increased transparency and efficiency.
13. **Legal Entity for Manufacturing and IFS:** Plans to establish a separate entity in the second half of 2024 to better serve foundry customers.
14. **Focus on Core Markets:** Ongoing effort to focus the portfolio, including exiting certain businesses and identifying profitable adjacent markets.

QUARTER HIGHLIGHTS

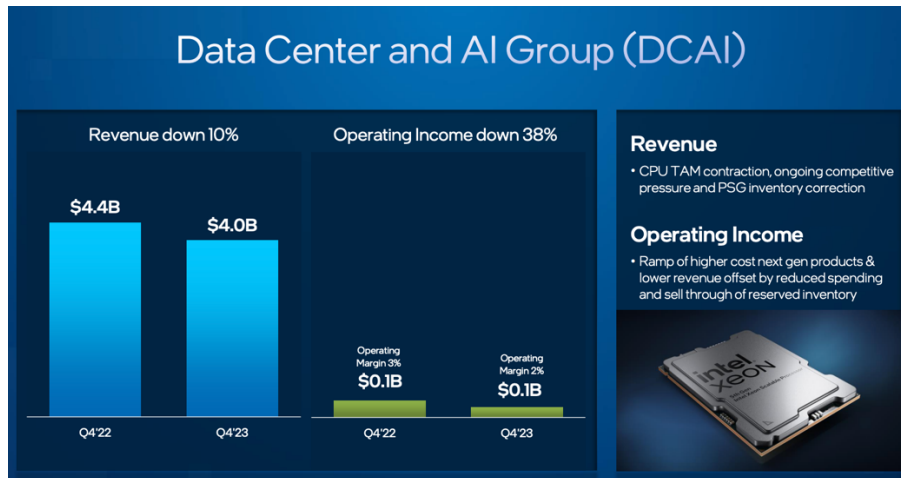
In its earnings call, CEO Pat Gelsinger pointed out several highlights hit by Intel during the quarter:

1. **IDM 2.0 Transformation:** Q4 marked significant progress in Intel's IDM 2.0 transformation, focusing on process leadership, capacity expansion, and foundry plans. The company also improved product execution and advanced its mission to integrate AI across all product segments.
2. **Q4 Performance:** Intel exceeded expectations for the fourth consecutive quarter, with revenue at the high end of guidance and strong EPS, aided by a focus on operating leverage and meeting a \$3 billion cost savings goal for fiscal year '23.
3. **Outlook for 2024:** Intel anticipates continued progress in its IDM 2.0 journey despite lower Q1 guidance due to discrete challenges like Mobileye and PSG. They expect growth in revenue and EPS throughout fiscal year '24.
4. **Manufacturing Milestones:** Intel achieved manufacturing readiness for Core Ultra on Intel 4 in Oregon and Intel 3. The company is leading in EUV technology and looks forward to launching Sierra Forest and Granite Rapids.
5. **Advanced Process Nodes:** Intel is progressing in its five nodes in its four-year plan, with innovations like gate-all-around and backside power delivery. Intel 20A and 18A are poised to bring Intel back to process leadership.
6. **Intel Foundry Services (IFS):** Significant strides were made in 2023, with over 40 strategic agreements and a focus on becoming a leading external foundry by 2030. The rapid adoption of AI across industries is benefiting IFS.

7. **New Partnerships and Agreements:** Intel announced a significant agreement with United Microelectronics (UMC) to develop a 12-nanometer process platform and continued partnerships with ARM and Synopsys.
8. **Client Computing Group (CCG):** The CCG showed strong performance in Q4, driven by growth in gaming and commercial segments. Intel launched Core Ultra, marking a significant architectural shift towards AI capabilities.



9. **AI and Data Center Focus:** Intel emphasized its comprehensive AI strategy, from cloud to edge computing. The server business grew, and new AI accelerators like Gaudi2 and Gaudi3 demonstrate competitive performance.



10. **Automotive Market Expansion:** Despite a temporary setback in Mobileye, Intel is optimistic about its automotive segment, including new production design wins and focusing on software-defined vehicles and EV technology.
11. **Operational and Financial Discipline:** Intel is transitioning to a new internal foundry model to improve cost efficiency and is aiming for long-term gross and operating margin goals.

Intel's statement reflects strong performance, strategic advancements in technology and manufacturing, and a focused approach to future growth, especially in AI and the automotive sector.

QUARTER CHALLENGES

Gelsinger also highlighted several headwinds that continue to face Intel:

1. **Q1 Seasonality:** Intel's core business, including server and edge products, performs at the lower end of seasonal expectations in Q1. This is surprising given the abating cyclical pressures and favorable market share trends. However, discrete headwinds like Mobileye and PSG impact the overall revenue, leading to a lower Q1 guide. Despite these challenges, Intel remains confident about improving performance throughout the fiscal year '24.
2. **Discrete Headwinds Affecting Revenue:** Intel noted specific challenges impacting its revenue, particularly in Q1. These include issues with Mobileye, PSG (Programmable Solutions Group), and the impact of exiting certain business segments. These factors contribute to a lowered revenue guidance for the first quarter.
3. **Cyclical Correction in PSG:** The PSG segment is undergoing an industry-wide cyclical correction, particularly in the FPGA (Field-Programmable Gate Array) market. This correction is expected to last through the first half of 2024, indicating a short-term challenge in this business area.
- **Operational Challenges in Advanced Node Development:** The progress on the 18A manufacturing node, a critical component of Intel's five nodes in 4 years strategy, is significant. With the taping out of Clearwater Forest and Panther Lake on track, Intel demonstrates confidence in its manufacturing capabilities. The inclusion of backside power and gate-all-around in a single process node, particularly being ahead in backside power, is a notable technological advancement.
4. **Manufacturing P&L Pressure:** Intel's manufacturing Profit and Loss (P&L) is under pressure as the company strives to regain process leadership and build infrastructure to meet internal and external demand. This includes the challenges associated with scaling manufacturing capabilities and implementing new technologies.
5. **Capacity Utilization and Efficiency:** Intel must manage capacity utilization rates and enhance operational efficiency, particularly as it transitions to internal manufacturing for critical products like Panther Lake. The internal foundry model is expected to unlock significant cost savings, contributing to the long-term gross and operating margin targets.

6. **Meeting Long-Term Financial Goals:** While Intel has made progress, there is an acknowledgment that much work remains to be done to meet its long-term financial objectives. This includes the drive towards achieving a long-term model of 60% gross and 40% operating margins.

Intel's data center and AI business demonstrate robust technological advancement and strategic positioning in key market segments. Despite facing seasonal headwinds and operational challenges, the company's focus on innovation, operational efficiency, and strategic use of external resources positions it well for future growth and market leadership.

DATA CENTER & AI GROUP PERFORMANCE

The performance of the Data Center and AI Group (DCAI) for the quarter can be summarized as follows:

- **Data Center Group (DCAI) Performance:**
 - **Revenue:** DCAI reported revenue of \$4 billion, marking a 4% sequential increase.
 - **Growth Drivers:** The revenue growth was primarily driven by improved unit Total Addressable Market (TAM), stable market share, and an increase in the average core density, which contributed to record Xeon Average Selling Prices (ASPs).
 - **Operating Profit:** The data center group's operating profit was \$78 million, which was relatively flat sequentially. This indicates that while revenue grew, the costs associated with advanced node development impacted profitability.
 - **Server Business:** Notably, the server business within DCAI delivered double-digit growth sequentially, although corrections in the FPGA inventory partially offset this.
- **AI Business Performance:**
 - **Accelerator Growth:** Intel's AI accelerators, specifically the Gaudi2, demonstrated strong price-performance leadership compared to popular GPUs. This suggests a competitive edge in the AI accelerator market.
 - **Future Launches:** The upcoming Gaudi3 accelerator, expected to launch within the year, is anticipated to deliver enhanced performance with quadruple the processing power and double the networking bandwidth.

- **Revenue Pipeline:** Intel has a substantial pipeline for its discrete accelerator portfolio, exceeding \$2 billion, which is expected to gain traction as 2024 progresses.
- **AI Integration in Data Centers:** The performance of Intel's AI business, particularly in the context of data centers, indicates a focus on growing the AI inferencing market on-premise, leveraging Intel's existing enterprise server strength.

Overall, Intel's data center and AI business showcased solid growth and market stability, with advancements in AI technology driving future potential.

However, cost pressure, particularly in advanced node development, is impacting overall profitability. The continued investment and focus on AI accelerators indicate a strategic commitment to expanding in the high-growth AI market.

ANALYSIS

The company is making concerted efforts to fortify its position in these critical market segments. Intel's Data Center Group has shown a commendable 4% sequential revenue growth, suggesting that their strategy to improve unit TAM and average core density is paying dividends. This is further bolstered by the stable market share and record ASPs for their Xeon processors, which remain a cornerstone of the company's data center offerings.

However, operational challenges, particularly in advanced node development, have kept operating profits relatively flat. This indicates that while Intel is successfully growing its top line, the cost of staying at the cutting edge of technology is significant.

Intel is demonstrating a forward-thinking approach to AI, especially with its AI accelerators like Gaudi2, which are showing a competitive edge against popular GPUs in the market. The anticipation around Gaudi3, which is expected to enhance performance notably, signals Intel's commitment to participating in and leading the AI hardware market.

AI accelerators could be a growth market for Intel. There's clear appetite across the industry for alternatives to NVIDIA, and as the AI cycle moves from training to inference, the door is open to alternatives. Intel's Gaudi2 has high marks on MLPerf and related benchmarks, driving high expectations for its coming Gaudi3.

The market, however, is hyper-competitive. AI is still primarily a cloud-first market, and every US-based tier-one CSP has in-house accelerators in development. AMD, notably, recently launched its well-received MI-300x AI accelerator. Intel's success in this space will be a blend of technical excellence, operational execution, and market acceptance. Intel has traditionally struggled to find success selling non-processor products, so this remains an area to watch.

While Intel's data center and AI segments show positive growth and strategic alignment with market trends, the company faces the ongoing challenge of balancing innovation-driven growth with operational cost efficiencies. As the semiconductor industry continues to evolve rapidly, particularly with the increasing integration of AI, Intel's ability to adapt and innovate will be critical to maintaining and expanding its market leadership.



RESEARCH NOTE

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